About PivotTable lists

A PivotTable list is an interactive table that you can use to analyze data dynamically from within your Web browser. You can use a PivotTable list to view and organize data from lists or databases, look for information or details, and create personalized summaries and reports. You can also add, edit, or delete the detail data that is displayed in a PivotTable list.

The following illustration shows a simple PivotTable list that displays summarized data.



When you create a PivotTable list, you select data from an external database or other source that you want to make available to viewers on your Web page. This data becomes the source data in the PivotTable list. You can then set up an initial presentation or view of the data, such as the summary shown in the preceding example, that analyzes the data in one of the many ways possible. You do this work in a design program, such as Microsoft Excel or Microsoft Access.

After you make the PivotTable list available on a Web page by publishing it, users who have the Microsoft Office Web Components— and a browser that supports PivotTable lists, such as Microsoft Internet Explorer 5.01 with Service Pack 2 (SP2) or later— can also analyze the data. In the browser or other run-time environment, users can display different fields and change your initial view to suit their needs. Depending on your design program and methods, you might also be able to make the PivotTable list available in programs other than browsers.

- When to use a PivotTable list.
- Creating a summary report
- Designing and publishing a PivotTable list

Browsers that support PivotTable lists

To work with interactive PivotTable lists, users must have the Microsoft Office Web Components installed, an appropriate Microsoft Office 2003 license, and Microsoft Internet Explorer 5.01 with Service Pack 2 (SP2) or later. Users who do not have an Office 2003 license can install the components and view them on a Web page, but cannot interact with them. Learn more about installation and licensing of components.

Following are the levels of browser support available when users have the Office Web Components installed and an Office 2003 license.

- ▶ Microsoft Internet Explorer 5.01 with Service Pack 2 (SP2) or later
- Other browsers

About Microsoft Office Web Components

Microsoft Office Web Components is a set of ActiveX controls installed with Microsoft Office 2003. With Office Web Components installed on your computer, you can interactively use a spreadsheet, a PivotTable list, and a chart on a Web page in Microsoft Internet Explorer 5.01 with Service Pack 2 (SP2) or later.

If Office Web Components is not installed on your computer but you have an Office 2003 site license that permits intranet distribution, you can configure the components so that users will be prompted to download Office Web Components from your corporate intranet. This allows users at your site to use a data access page without having Office 2003 software installed on their computers.

For information about how to configure Office Web Components, see the Microsoft Office 2003 Resource Kit.

About installing, licensing, and distributing Office Web Components

When you design a Web page using Microsoft Office Web Components, any user with a Microsoft Office 2003 license can interact with the components in the browser to the level of interactivity you provide. That is, a user with an appropriate license can make changes to data in a spreadsheet, change formatting, drag fields in a chart or PivotTable List, and so on, as long as you didn't protect these options at design time. Users with an Office 2003 license can also create, design, and modify components in a design environment such as Microsoft FrontPage or Microsoft Access.

Users who do not have Office 2003 licenses can view the components and the data in them, and can print the view of the components, but they cannot interact with the components or manipulate them in a design environment. This means that if you distribute a Web page that uses components, users who have Office 2003 licenses will have access to all functionality provided, but users without a license can only view the data and information you've provided.

- ▶ Installing the Office Web Components
- Details on licensing and functionality

About View-only mode for Office Web Components

If you do not have a Microsoft Office 2003 software license installed on your computer or accessed via a Microsoft Office application, you can view a Microsoft Office Web Component— a Spreadsheet Component, Chart Component, or PivotTable Component— on a Web page, but you cannot interact with it.

To be able to interact with and use full functionality of the component you are viewing, you must install Microsoft Office 2003 or have access to an Office 2003 license. If you are in a corporate or group environment, check with your network administrator for assistance.

When you are in View-only mode, you can:

View data.

Print.

Select and scroll.

Use hyperlinks.

Resize a component.

Select sheets in the Spreadsheet Component.

Expand or collapse members in a PivotTable list.

Refresh data in a PivotTable list.

Use the **About**, **Help**, and **Refresh** commands. Help topics that deal with interactivity (such as formatting cells, dragging fields, sorting, filtering, and so on) do not apply.

All commands except **About**, **Help**, and **Refresh** are unavailable in Viewonly mode.

About getting help

Some of the content in this topic may not be applicable to some languages.

- ▶ Getting help in other design programs
- ▶ Getting help with writing programs and scripts for PivotTable lists
- ▶ Getting help when using a PivotTable list in a browser

Keyboard shortcuts

For information about activating and deactivating a PivotTable list by using the keyboard, see Help for your design program.

- Keys for selecting the elements of a PivotTable list
- Keys for carrying out commands
- ▶ Keys for displaying, hiding, filtering, and sorting data
- ▶ Adding fields and totals and changing the layout of a PivotTable list
- ▶ Keys for formatting a PivotTable list
- Keys for following hyperlinks
- ▶ Keys for adding, editing, or deleting data
- ▶ Keys for working with Help

About the toolbar, field list, and Commands and Options dialog box

- ▶ The PivotTable list toolbar
- ▶ The PivotTable list field list
- ▶ The **Commands and Options** dialog box

Show or hide the toolbar

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Right-click the PivotTable list, and then click **Commands and Options**.
- 3. Click the **Behavior** tab.
- 4. Select or clear the **Toolbar** check box.

Note Displaying the toolbar in the design program also makes the toolbar available in the browser. To ensure that users cannot redisplay the toolbar in the browser, you must make the **Commands and Options** dialog box unavailable because the dialog box includes a command to redisplay the toolbar. You must also hide the title bar to prevent access to the shortcut menu command to display the toolbar. Hiding the title bar does not prevent access to some of the commands provided on the toolbar. These commands will still be available from the shortcut menus for fields, items of data, and other selections, unless you hide them by using a script.

Show or hide the field list

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click **Field List** on the <u>toolbar</u>.

Show or hide the Commands and Options dialog box

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Do one of the following:
- If the <u>toolbar</u> is displayed, click **Commands and Options** in the toolbar.
- If the toolbar is hidden, right-click the PivotTable list, and then click **Commands and Options**.

Note If you leave the **Commands and Options** dialog box displayed while you select different parts of the PivotTable list or other Microsoft Office Web Components, the available sections and their contents change to reflect your current selection. If you select a part of the Web page other than an Office Web Component, the dialog box will be hidden.

Show or hide the title bar

Note You can't show the title bar if the PivotTable list is not bound to a data source.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. On the <u>toolbar</u>, click **Commands and Options** , and then click the **Behavior** tab.
- 3. Select or clear the **Title bar** check box.

Show or hide drop areas

When the drop areas are hidden and the PivotTable list does not have a field in the row, column, data, or filter area, you can't drag fields to these areas.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. On the <u>toolbar</u> in the PivotTable list, click **Commands and Options** , and then click the **Behavior** tab.
- 3. Select or clear the **Drop areas** check box.

Note You will not see the drop areas if the PivotTable list is not bound to a data source.

Applications that you can use to design or modify a PivotTable list

A PivotTable list is a component that you create and design in one program, the design program, for use in another program, the run-time program. PivotTable lists are intended primarily for use in the Microsoft Internet Explorer 5.01 with Service Pack 2 (SP2) or later.

Depending on the content of your Web page and the tasks that users will perform with your PivotTable list, some programs might be better suited to your design task than others. You can start creating a Web page and adding components, including PivotTable lists, in one design program, and then open the Web page in another program to do further work.

For example, if you have designed a PivotTable report in Microsoft Excel, you can use Excel to save or publish this report to a PivotTable list on a Web page. If you want to customize the resulting PivotTable list to change the default settings, or if you want to add other controls to the page, you can then open and modify the Web page in Microsoft FrontPage.

See the Help for the design program you want to use to find out whether the program supports designing PivotTable lists, and to learn its procedures for creating and modifying one.

You can use the following design programs to create PivotTable lists:

- Microsoft Excel
- Microsoft FrontPage
- Microsoft Access
- Microsoft Visual Basic

Note Microsoft Word is not a suitable design program for PivotTable lists.

About PivotTable list source data

A PivotTable list is a means of bringing data from external sources into a Web page for display and analysis. When you design a PivotTable list, you select the source data that the control will use and make available in the browser, and you establish a connection to that source data. In the browser, users can then refresh the PivotTable list to view updated source data.

Types of source data

PivotTable lists can display data from several different sources. The most common sources of data are relational databases, Microsoft Excel worksheets, and On-Line Analytical Processing (OLAP) databases.

- Relational databases
- Microsoft Excel worksheets
- OLAP databases

Connecting to source data

If you are using Microsoft Access data access page Design view as your design program, you can use the methods and commands in Access to prepare data and establish connections. For information and procedures, see Access Help.

- Setting up a data source
- Creating a query to retrieve the data
- ▶ Adding the data to the PivotTable list
- ▶ How drivers and data sources affect users of your Web page

Security Note Under some circumstances, a user can view the information used to connect to an external data source. This may represent a security risk. For more information, see <u>About making</u> connections to external data sources more secure.

Refreshing the PivotTable list when the source data changes

After you have established a connection to a database, you can refresh the PivotTable list when you need to reflect updates and changes to the source data.

- ▶ Refreshing when source data is from relational databases
- ▶ Refreshing when source data is from Microsoft Excel worksheets
- ▶ Refreshing when source data is from OLAP databases
- ▶ Refreshing data in the browser

About making connections to external data sources more secure

When you define a connection to an external data source for a PivotTable list on a Web page, the authoring environment stores this information as an unencrypted (plain text) connection string in the HTML source. As a result, a user opening the page in a browser can easily view the HTML source for the page and read the connection string, which may include a user name and password.

To prevent unauthorized access using information from the connection string, if the data source supports this mode of authentication, use Windows Authentication (also referred to as a Trusted Connection and Integrated Security), which uses the current user's Microsoft Windows® account to connect to an external data source. Using Windows Authentication to connect to an external data source has the following advantages:

The page designer doesn't have to enter a user name or password to connect to the data source, so that information cannot be exposed in the page's HTML source.

The user of the page doesn't have to enter a user name or password to connect to the data source when opening the page, so that information cannot be compromised while it's being sent to the server.

Only a Windows user account that is configured in the security system for the data source will be allowed to connect to that data source.

For example to connect to Microsoft SQL Server using Windows Authentication, use the following procedure when defining a connection.

Important Before you can use Windows Authentication to connect to a Microsoft SQL Server database, a server administrator must configure the server to use this mode of authentication, and must grant your Windows user account (or a group of which your user account is a member) login access. Additionally, the server administrator should provide your account with the minimum level of permissions required for your PivotTable list.

1. In the design window, make sure the PivotTable list is activated.

For instructions, see Help for your design program.

- 2. Click **Commands and Options** on the toolbar, and then click the **Data Source** tab.
- Click Edit.

Depending on the design program you are using, clicking **Edit** displays the **Select Data Source** dialog box or the **Data Link Properties** dialog box.

If the **Data Link Properties** dialog box appears, do the following:

- Double-click Microsoft OLE DB Provider for SQL Server on the Provider tab.
- 2. On the **Connection** tab, specify the name of the server.
- 3. Select Use Windows NT Integrated security.
- 4. Select a database and click **OK**.

If the **Select Data Source** dialog box appears, do the following:

- 1. Double-click **New SQL Server Connection**.
- 2. In the **Server name** text box, specify the name of the server.
- 3. Under Log on credentials, click Use Windows Authentication.
- 4. Click **Next**, and then follow the directions in remaining screens of the Data Connection Wizard to specify the data to retrieve.

Note Other data sources that support Windows Authentication may present different options in the Data Connection Wizard. For example, to connect to an Oracle database using Windows Authentication, you must enter only a forward slash (/) in the **User Name** box. For more information, see the documentation for the data source provider you are using.

If Windows Authentication is not available for the data source you want to connect to, you must enter a user name and password to connect to the data source. Because this user name and password might be viewed when the PivotTable list is on a Web page, do not use this mode of authentication to connect to sensitive data from a PivotTable list on a Web page. Even if you are not concerned about unauthorized users viewing your data, you should connect only with a user account that has limited permissions on the data source. For example, when connecting to a SQL Server database using a user name and password, do not use the SA account or any other account that has elevated permissions, because an unauthorized user might be able to use this account and password to access other data on the server.

Note If you use the Data Retrieval Service for Microsoft SQL Server (or use an Data Retrieval Service Connections (.uxdc) file that is defined to use that data retrieval service) to connect to an external data source, and you do not use Windows Authentication, the user name and password used to connect to the data source are not saved in the Web page. When you use this method to connect to an external data source, users of the Web Page that hosts your PivotTable list will be prompted to enter their login information.

About accessing a data source on a different domain

When a PivotTable list attempts to access data on another domain, it might fail due to one of the following reasons:

The site being accessed by the control is not included in the list of trusted sites.

In Internet Explorer, on the **Security Settings** dialog box, under **Miscellaneous**, **Access data sources across domains** is either set to **Disable**, or set to **Prompt** and when prompted, you clicked **Cancel**.

To enable access across domains, do the following:

- Enable prompting
- Add the site to the list of trusted sites

Add data to a PivotTable list

Your design program might provide a simpler way to add data to a PivotTable list. Use the following procedure if your design program does not provide a procedure to add the data.

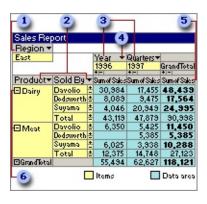
Before you can add data to a PivotTable list, you might have to install an ODBC driver or data source driver (OLE DB or OLAP support software) and set up a data source to connect to the database. For more information, see Help for your design program.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the PivotTable list, or if data has already been added to the PivotTable list, click the <u>title bar</u> of the PivotTable list.
- 3. On the <u>toolbar</u> in the PivotTable list, click **Commands and Options** , and then click the **Data Source** tab.
- 4. Under **Get data using**, do one of the following:
 - Use a data source control
 - Specify connection information
- 5. Under **Use data from**, do one of the following:
- To use the data from a specific element within the database, such as an existing table or query, click **Data member, table,** view, or cube name, and then select the element you want from the list.
- To use a query or command— such as an SQL statement— to select the data, click **Command text or SQL**, and then type the query or command in the box. For information about the query or command syntax, see the documentation for your database.
- 6. Click **Field List** on the <u>toolbar</u>, and drag the fields to the different areas in the PivotTable list.

Note Users cannot change a PivotTable list's connection settings in the browser.

Security Note Under some circumstances, a user can view the information used to connect to an external data source. This may represent a security risk. For more information, see <u>About making connections to external data sources more secure</u>.

Elements of a PivotTable list



- Filter field
- Row fields
- Column fields
- Field drop-down arrow
- Data field
- Expand Indicators
- ▶ Fields
- ▶ Item
- Row field
- Column field
- ▶ Filter field
- Data field
- Data area
- Detail field
- Detail area
- ▶ Field drop-down arrow

Select an element of a PivotTable list

- ▶ Select the entire PivotTable list
- ▶ Select one or more data cells
- ▶ Select a row, column, or filter field
- ▶ Select a detail field
- Select a total field
- Select one or more items
- Select a subtotal or grand total
- Select the title bar or a drop area
- Select a custom property of a row or column field

View information about a field or item

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Do one of the following:
- For information about a field, click the label of the field.
- For information about an item of data in a field, click the item.
- 3. On the <u>toolbar</u> in the PivotTable list, click **Commands and Options** , and then click the **Captions** tab.

Create a PivotTable list

The specific steps for creating a PivotTable list depend on the program you are using to design your Web page. In Microsoft Access, for example, you can add data to a PivotTable list automatically. For more information, see Help for your design program. If your design program Help does not provide a procedure for creating controls such as PivotTable lists, follow these steps:

- 1. In your design program, open or create the Web page where you want the PivotTable list to appear.
- 2. By using the design program's procedure for adding a control to a Web page, select the PivotTable Component and designate the location and initial size of the PivotTable list on the Web page.
- 3. Add your source data to the PivotTable list.
 - ▶ How?

Security Note Under some circumstances, a user can view the information used to connect to an external data source. This may represent a security risk. For more information, see <u>About making connections to external data sources more secure</u>.

Save changes to a PivotTable list

To save your changes, use the design program's command to save the file containing the PivotTable list. For information about how to save changes, see Help for your design program.

Note Users cannot save changes in the browser, but they can export or copy the PivotTable list from the browser.

Print a PivotTable list

To print a PivotTable list, use the print command in your design program. The results you get depend on the design program's print capabilities. For more information, see Help for your design program.

Notes

If the PivotTable list is wider or longer than the printed page, the areas that don't fit on the page are not printed. For more control over how the data is printed, including the ability to print a long list and set page breaks, you can export the PivotTable list to Microsoft Excel by clicking **Export to Microsoft Excel** on the <u>toolbar</u>. For information about printing from Excel, see Excel Help.

Microsoft FrontPage might not print a PivotTable list correctly. If you are using FrontPage as your design program, click **Preview in Browser** on the **File** menu, and then print the Web page that contains the PivotTable list from Microsoft Internet Explorer.

Remove a PivotTable list from a Web page

- 1. In your design program, select the PivotTable list. For instructions, see Help for your design program.
- 2. Press DELETE.

Note You cannot delete a PivotTable list from a Web page in the browser.

About creating a chart based on a PivotTable list

When you create a chart based on a PivotTable list, the data displayed in the PivotTable list is plotted in the chart. When you change the view of the data in either the PivotTable list or the chart, the other component is dynamically updated to reflect the changes. For example, if you add a field to the row or column area, the chart is updated to reflect the new field as either category or series data. When you filter data in a chart, the data in the PivotTable list is also filtered.

- ▶ Preparing the PivotTable list
- Creating a chart
- Using the chart

Create a chart based on a PivotTable list

The specific steps for creating a chart based on a PivotTable list depend on the design program you are using to create your Web page. For more information, see Help for that program. If Help for your design program does not provide a procedure for creating controls such as charts, follow these steps:

- 1. In your design program, open or create the Web page where you want the chart to appear.
- 2. If you don't have a PivotTable list on the Web page yet, create the PivotTable list.
- 3. Add the necessary fields to the row and column areas of the PivotTable list.
 - **Note** Data in row and column fields is used for the series and categories in your chart.
- 4. Add a chart to the Web page by using Help for the design program.
- 5. Click inside the chart.
 - The chart's **Commands and Options** dialog box will appear.
- 6. Select **Data from the following Web page item** and click the entry corresponding to the PivotTable list you want to use.

About using a PivotTable list in a browser

You can create a PivotTable list in a design program for access in a Web browser or another run-time environment.

Note If you plan to create PivotTable lists for use in a program other than a Web browser, such as a Microsoft Visual Basic form that's part of a custom solution, see Help for your design program to find out how users of your work can access and interact with the PivotTable list.

- Requirements for using a PivotTable list in a browser
- ▶ The browser interface for PivotTable lists
- Accessing Help from the browser
- ▶ Restricting use of a PivotTable list in a browser

About restricting the use of a PivotTable list in the browser

Some PivotTable list features are available only when you're working in the design program. Other features are available both while designing the PivotTable list and while using it in a browser. However, as a designer, you can restrict the availability of these features to a user by changing property settings.

Regardless of the capabilities you have made available to the users, whether users can take advantage of those capabilities depends on what browser they are running. To take full advantage of the capabilities of PivotTable lists, users need Microsoft Internet Explorer 5.01 with Service Pack 2 (SP2) or later.

- Capabilities that are not available in a browser
- Capabilities that are usually available in the browser
- Restrictions that you can set

Restrict the use of a PivotTable list in the browser

When you change a setting to prevent a user from doing a specific task, you will not be able to do that task in the design program unless you change the setting again.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click **Commands and Options** on the <u>toolbar</u>.
- 3. Click the title bar of the PivotTable list.
- 4. In the **Commands and Options** dialog box, click the **Protection** tab.
- 5. Do one of the following:
 - Prevent adding, changing, or removing filters
 - Prevent grouping or changing the layout
 - Prevent sorting data in custom order
 - Prevent displaying detail data
 - ▶ Prevent editing detail data
 - ▶ Prevent adding detail rows
 - ▶ Prevent deleting detail rows
 - ▶ Prevent access to the Commands and Options dialog box

Notes

Even if you clear the **View the Commands and Options Window in run mode** check box, the **Commands and Options** button is always available on the toolbar when you are designing the PivotTable list.

In Microsoft Excel, these restrictions have no effect. Users who export a PivotTable list to Excel from the browser can then use Excel features to view all detail data that is available in the source data. To prevent users from accessing the detail data in this way, you can restrict access to the **Export to Microsoft Excel** command in the browser by turning off the toolbar, restricting access to the **Commands and Options** dialog box,

and writing code to hide the shortcut menus.

Change title, captions, and labels

Note The changes you make don't affect the source data.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click **Commands and Options** on the <u>toolbar</u>.
- 3. Do one or more of the following:
 - ▶ Change the title bar text or the caption of a drop area
 - Change the caption of a field, fieldset, or custom group field
 - ▶ Change the caption of an item property
 - Change the caption of an item or custom group

Note If you don't want a caption for the selected item, clear the **Caption** text box.

About providing custom instructions for a PivotTable list

Depending on the skills of your users and the type of work they want to do, you might want to supplement the run-time Help by providing custom instructions for your PivotTable list on the Web page. However, you cannot connect your instructions directly to the online Help provided with the PivotTable list.

You can provide instructions by including text directly on the Web page that describes the PivotTable list, or by providing a hyperlink to a separate Web page of instructions.

For information about how to do this on different types of Web pages, consult Help for your Web page design program.

About adding and removing fields

When you add data to a PivotTable list, you specify the database to take the data from and the subset of that data to make available as the source data for the PivotTable list. From this source data, you can select fields for initial display in the PivotTable list.

- ▶ Viewing the fields available to the PivotTable list
- Adding fields to the detail area
- Adding fields to the row or column area
- Adding fields to the data area
- Adding fields to the filter area
- Adding total fields
- Removing fields
- Moving fields
- Impact of adding and removing fields on filtering
- Viewing information about fields
- Restricting use of the PivotTable list in the browser

Add or remove a field

- Add a field
- ▶ Remove a field

About customizing the layout of a PivotTable list

You can control how the data in a PivotTable list is summarized by customizing the layout. A different layout lets you calculate and compare summarized values for different elements in your data, or display summaries for a subset of the data. When you make the PivotTable list available to users, users can make further changes to your initial layout.

- Using the drop areas
- Moving fields to the row and column areas
- Moving fields to the detail area
- Moving fields to the data area
- Moving fields to the filter area
- Moving row and column fields to a higher or lower level
- Adding and removing fields
- Restrictions on moving and adding fields
- Restricting use of a PivotTable list in the browser

Move a field or column

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Display the drop areas for the PivotTable list.
 - ▶ How?
- 3. Do one or more of the following:
 - Move a field to the row or column area
 - Move a field to the detail area
 - Move a field to the data area
 - Move a field to the filter area
 - ▶ Move a row or column field to a higher or lower level (Change the column order of fields)

Note You can prevent users from moving fields by changing the setting on the **Protection** tab in the **Commands and Options** dialog box. To display the **Protection** tab, click the PivotTable list title bar.

Set the size of a PivotTable list and its elements

- ▶ Set the size of a PivotTable list
- ▶ Change the width of a column in the row, column, detail, or data area

Note You cannot adjust the height of the rows in a PivotTable list.

About calculating totals

PivotTable lists use two different types of totals to display summarized values. The first type, a total field, provides the summarized values for the PivotTable list. When your PivotTable list contains a total field, you can also display the second type— subtotals and grand totals— for the row and column fields.

- ▶ Total fields
- Subtotals and grand totals

Summary functions available in a PivotTable list

The following table lists the summary functions provided by the **AutoCalc** command that you use to create total fields.

Function	Description
Sum	Calculates the sum of the values.
Count	Tallies the number of values. Empty values, such as zero- length strings (strings that contain no characters), are included in the count, but null values (values that indicate missing or unknown data) are not included.
Min	Returns the smallest value in the field being summarized.
Max	Returns the largest value in the field being summarized.
Average	Returns the average of the values in the field being summarized.
Standard Deviation	Returns the standard deviation of the values in the field being summarized, assuming the values are a sample of a larger population.
Standard Deviation Population	Returns the standard deviation of the values in the field being summarized, assuming the values are the entire population.
Variance	Returns the variance of the values in the field being summarized, assuming the values are a sample of a larger population.
Variance Population	Returns the variance of the values in the field being summarized, assuming the values are the entire population.

Note The summary functions available for a field depend on the type of data in the field. For example, if a field contains text, you cannot use **Sum**, **Min**, or **Max**, but you can use **Count** for that field.

Show or hide totals for a field

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the row or column field for which you want to show or hide subtotals and grand totals.
- 3. To show the totals, on the <u>toolbar</u> in the PivotTable list, click the **Subtotal** button is so that it is selected. To hide totals, click the button again.

Notes

Subtotals and grand totals are not displayed for fields in the detail area (the area where all of the individual records can be displayed).

When you choose to display them, subtotal and grand total values are displayed for every total field in the PivotTable list. You can't exclude individual total fields.

Subtotal and grand total calculations can include or exclude items of data that are hidden by filtering.

Customize a total field

- ▶ Change the orientation of total fields
- Show totals as percentages

Include or exclude hidden data when calculating totals

This procedure affects all subtotals and grand totals in the PivotTable list.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the title bar of the PivotTable list.
- 3. On the <u>toolbar</u>, click **Commands and Options** , and then click the **Report** tab.
- 4. Under Calculate totals based on, do one of the following:
- To include hidden data, select **All items (including hidden items)**.
- To exclude hidden data, select Visible items only.

Notes

This setting affects data hidden by filtering row and column fields; data hidden by using filter fields is always excluded from totals.

When you choose to include hidden data, asterisks (*) appear next to the captions of subtotals and grand totals to note that the total values include hidden items as well as displayed items.

Edit a calculated field

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Select the calculated field whose expression you want to edit.
- 3. On the <u>toolbar</u>, click **Commands and Options** , and then click the **Calculation** tab.
- Edit the expression, and then click **Change**.
 The data values will be automatically recalculated using the new expression.

▶ Tip

About hyperlinks

A hyperlink is a pointer from one object to another. The destination is frequently another Web page, but it can also be a picture, an e-mail address, a file (such as a multimedia file or Microsoft Office document), or a program. The hyperlink itself can be displayed as text or as a picture.

You can use hyperlinks to do the following:

Navigate to a file or Web page on a network, intranet, or Internet

Send an e-mail message

Start a file transfer, such as a download or an FTP process

When you point to text or a picture that contains a hyperlink, the pointer becomes a hand , indicating that it is something you can click. When a site visitor clicks the hyperlink, the destination is displayed, opened, or run, depending on the type of destination. For example, a hyperlink to a sound file opens the file in a media player, and a hyperlink to a Web page displays the page in a Web browser.

- ▶ Parts of a hyperlink address
- Showing data as hyperlinks
- Grouping on fields that contain hyperlinks

Show data as hyperlinks

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the row, column, or detail field that contains hyperlinks.
- 3. On the <u>toolbar</u> in the PivotTable list, click **Commands and Options** , and then click the **Format** tab.
- 4. Select the **Display as hyperlink** check box.

Show or hide ScreenTips

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the title bar.
- 3. On the <u>toolbar</u> in the PivotTable list, click **Commands and Options** , and then click the **Report** tab.
- 4. Select or clear the **ScreenTips** check box.

Note If you hide the ScreenTips, you won't see the item properties that are set to display as ScreenTips. Item properties set to display in the report will still be visible.

Show or hide expand indicators next to items

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the title bar of the PivotTable list.
- 3. On the <u>toolbar</u> in the PivotTable list, click **Commands and Options** , and then click the **Behavior** tab.
- 4. Select or clear the **Expand indicator** check box.

Notes

This setting does not affect the \oplus and \ominus boxes that appear to the right of the items at the lowest level.

Items at the lowest level in a row or column area don't have expand indicators on their left.

If you don't want users to be able to change whether expand indicators are displayed, you can restrict access to the **Commands and Options** dialog box in the browser.

About displaying details and items

You can set up a PivotTable list to display different levels of items and detail available in the source data. You can display all of the available detail and item levels, only high-level summaries, or any level of detail in between, and you can display selected detail for items of data that you want to emphasize. Unless you restrict access, users can change the PivotTable list in the browser to display different levels and amounts of detail.

- Displaying detail data
- Displaying lower-level items

Show or hide detail data for an item or field

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Do one of the following:
- To show or hide detail data for a cell, or an item at the lowest level, select the item or cell.
- To show or hide detail data for a row or column field, select the row or column field.
- 3. Click **Show Details** in or **Hide Details** on the <u>toolbar</u>.

Notes

To show or hide lower-level items, select the row or column field or item, and then click **Expand** or **Collapse** on the <u>toolbar</u>.

If you don't want users to display detail data, you can restrict access to detail in the browser.

Show or hide items

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Do one of the following:
- To show or hide the lower-level items of a specific item in the row or column axis, click the expand indicator (⊕ or □ box) next to the item.
- To show or hide the lower-level items for all items in a row or column field, click the field label, and then click **Expand** or **Collapse** on the <u>toolbar</u>.

Notes

If the \blacksquare or \blacksquare box is not visible next to the item, select the **Expand** indicator check box on the **Behavior** tab in the **Commands and Options** dialog box. If after selecting the check box you don't see an expand indicator next to an item, the item might be at the lowest level available for the source data.

To show or hide details, select the item or field, and then click **Show Details** in or **Hide Details** on the toolbar.

Show or hide items that have no data

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the title bar of the PivotTable list.
- 3. On the <u>toolbar</u> in the PivotTable list, click **Commands and Options** , and then click the **Report** tab.
- 4. Select or clear the **Empty rows** and **Empty columns** check boxes.

Automatically show all detail data

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the title bar of the PivotTable list.
- 3. On the <u>toolbar</u>, click **Commands and Options** , and then click the **Behavior** tab.
- 4. Set **Expand details by default** to **Always**.

Notes

To hide detail data for all items, select **Never** in the **Expand details by default** list. If you set **Expand details by default** to **Automatic**, data from tabular sources will be expanded by default, but data from OLAP databases will be hidden.

To automatically show all items in a PivotTable list, on the **Behavior** tab, set **Expand items by default** to **Always**.

Detail data usually is not available for display in PivotTable lists that are based on source data from OLAP databases. If detail data is not available, changing the **Expand details by default** setting has no effect.

Automatically show all items

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the title bar of the PivotTable list.
- 3. On the <u>toolbar</u>, click **Commands and Options** , and then click the **Behavior** tab.
- 4. Set **Expand items by default** to **Always**.

Notes

To hide all items, select **Never** in the **Expand items by default** list. If you set **Expand items by default** to **Automatic**, fields from tabular sources will be expanded by default, but fields from OLAP databases will be hidden.

To automatically show all details in a PivotTable list, on the **Behavior** tab, set **Expand details by default** to **Always**.

Add, edit, or delete detail data

If you can't add, edit, or delete data in a PivotTable list, it means one of the following:

The properties on the **Protection** tab of the **Commands and Options** dialog box have been set to prevent additions, edits, or deletions.

The field you are trying to edit is a read-only field, and does not support edits.

The underlying table does not have a primary key.

- Add data
- Edit data
- Delete data

Notes

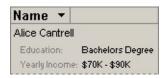
When entering data for a field that has a number format applied to it, you need not type formatted data. When you leave the cell, the format will be automatically applied to the cell contents.

Only detail cells can be edited directly in the PivotTable list. To change a caption or the title, use the **Commands and Options** dialog box.

About item properties

You can display additional information about items by displaying the custom properties of a row or column field. For example, if the database administrator has made available two custom properties, Manager and Phone Number, for the Store field, you can choose to display the property values for each item in the Store field, either in the PivotTable list or as ScreenTips.

The following illustration shows how the Employees report will look with the custom properties Education and Yearly Income displayed in the report.



The users of a PivotTable list cannot create custom properties. However, they can show or hide properties, and choose whether the properties are displayed in the report or as ScreenTips.

The following illustration shows the Education property displayed in the report and the Yearly Income property displayed in the ScreenTip.



The users of the PivotTable list can also format the property captions and values, and specify the order in which the properties are displayed in the report or ScreenTip.

Non-OLAP data sources do not support custom properties.

Show or hide item properties

You can show item properties of row and column fields either in the report or as ScreenTips.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the field whose custom properties you want to show or hide.
- 3. On the <u>toolbar</u> in the PivotTable list, click **Commands and Options** , and then click the **Item Properties** tab.
- 4. In the **Item properties** list, select the property for which you want to change settings.
- 5. In the **Display in** list, select one of the following:
- Report To show the property caption and value next to the item names.
- **ScreenTip** To show the property caption and value as part of each item's ScreenTip.
- All To show the property caption and value in the report as well as in the ScreenTips.
- None To hide the property caption and its value.
- 6. Repeat steps 4 and 5 for each custom property of the selected field.

Notes

If you choose to show the properties as ScreenTips, ensure that the **ScreenTips** check box on the **Report** tab in the **Commands and Options** dialog box is selected.

You can change the order in which the custom properties are displayed in the report or ScreenTip.

You can format the caption and value of a custom property. The format does not affect the property when displayed in a ScreenTip.

Non-OLAP data sources do not support custom properties.

Specify the display order of item properties

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the field whose item properties you want to order.
- 3. On the <u>toolbar</u> in the PivotTable list, click **Commands and Options** , and then click the **Item Properties** tab.

The order in which the properties are listed in the **Item properties** box is the order in which the properties are displayed in the report or ScreenTips.

4.	Select the property that you want to display at the top Up until the property appears as the first ite list.	•
5.	Order the rest of the properties by clicking Up Down	or

Note If new properties are added after you order the list, the new properties will appear at the end of the list until you reorder them.

About formatting a PivotTable list and its elements

- Formatting elements
- ▶ Formatting an entire PivotTable list

Format a PivotTable list and its elements

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Select the element that you want to format.
 - ▶ How?
- 3. Click **Commands and Options** on the <u>toolbar</u>.
- 4. Do one of the following:
- To format a drop area, click the **Captions** tab.
- To format an item property of a row or column field, click the **Item Properties** tab.
- To format all other elements of a PivotTable list, click the Format tab.
- 5. Do one or more of the following:
 - Specify font and style settings
 - Align text
 - Set background color
 - ▶ Change the number format of a field, total, or item property of a row or column field

Notes

You can't format the contents of a ScreenTip. Therefore, the formats you apply to an item property apply to the property only when it is displayed in the report.

You cannot apply a format to an entire PivotTable list in one operation.

Format the contents of a PivotTable list to read right to left or left to right

Use right-to-left display when your PivotTable list will be viewed in languages that are read from right to left. When you select right-to-left display, the elements of the PivotTable list are displayed as a mirror image of the default left-to-right display: The drop areas are on the upper-right side of the PivotTable list, row fields are in the rightmost columns, and items in column fields are listed from right to left.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Click the title bar of the PivotTable list.
- 3. Click **Commands and Options** on the <u>toolbar</u>, and then click the **Behavior** tab.
- 4. Select or clear the **Display right to left** check box.

Number formats for PivotTable lists

Some of the content in this topic may not be applicable to some languages.

The following table lists the number formats supported in a PivotTable list.

Format	Effects
General	Displays a number right-aligned, with no thousands separator, and preceded by a minus sign if negative.
	Displays up to 11 digits, or 10 digits with a decimal point, rounding additional digits to the right of the decimal point. Displays numbers with more than 11 digits to the left of the decimal point in scientific format.
	Displays text left-aligned.
General Date	Displays a number as a date and optional time. For example, 8/31/99 05:54 AM.
	The fractional part of the number is the time. If a number has no fractional part, only a date appears. If a number has only a fractional part and no integer part, only a time appears.
Long Date	Displays a date according to the Microsoft Windows regional setting for the long date format. For example, Thursday, January 25, 2001.
Medium Date	Displays a date using the abbreviated month names and hyphens (-) to separate month, day, and year. For example, Jan-25-2001.
Short Date	Displays a date according to the Windows regional setting for the short date format. For example, 1/25/2001.
Long Time	Displays a time according to the Windows regional setting for the long time format. For example, 8:45:36 PM.
Medium Time	Displays a time in 12-hour format with an AM or PM designator, omitting the seconds. For example, 8:45 PM.
Short Time	Displays a time in 24-hour format, omitting the seconds. For example, 20:45.

Currency	Displays a number according to the Windows regional setting for currency. For example, with the default United States English regional settings, \$2,532.75.
Euro Currency	Displays a number as euro currency, with a thousands separator and two decimal places. The placement of the euro sign and the decimal places are based on the regional settings for currency in Windows Control Panel. For example, with the default United States English regional settings, €12.35.
Fixed	Displays a number with two decimal places. For example, 68.30.
Standard	Displays a number according to the Windows regional settings for numbers. For example, with a comma as the thousands separator and a period as the decimal symbol, 1,800.00.
Percent	Displays a number multiplied by 100, with two decimal places and a percent sign. For example, the value 0.8914 would be displayed as 89.14%.
Scientific	Displays a number in exponential notation. For example, 1.25E+10.
Yes/No	Displays No if the number is 0; displays Yes for any other number.
True/False	Displays False if the number is 0; displays True for any other number.
On/Off	Displays Off if the number is 0; displays On for any other number.

Notes

The regional settings in Windows Control Panel determine how number, currency, date, and time formats are displayed, both in the design program and at run time in the browser. For example, these settings determine whether years are displayed with two digits or four digits. See Windows Help for information about these formats.

In Microsoft Visual Basic or in a script, you can assign custom number formats to the data. You can also type custom formats available in the PivotTable list object model in the **Number** box.

About sorting data

You can sort data when designing the PivotTable list or when viewing it in the browser. However, you can restrict some access to sorting in the browser.

- Sort in ascending or descending order
- Define a custom sort order

Sort data in a PivotTable list

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Do one of the following:
 - Sort in ascending or descending order
 - Specify a custom sort order

Notes

To switch from ascending or descending sort to custom sort, click **Sort Ascending** or **Sort Descending** so that the button is not selected.

The order in which numbers, text, and special characters are sorted depends on the source data and your regional settings in Microsoft Windows Control Panel. If users have different regional settings in their browsers, their sort orders might be different from yours.

Remove sort order

Removing ascending or descending sort order will return the data either to its natural order, or if a custom order was specified, to the custom order.

Click the **Sort Ascending** button or the **Sort Descending** button on the <u>toolbar</u> so that the button is not selected.

About grouping items

You can group data when designing the PivotTable list or when viewing it in the browser. However, you can restrict some access to grouping in the browser.

You can group items in a row or column field in two ways.

- Grouping on intervals
- Custom grouping

Group or ungroup items

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Do one of the following:
 - Group items at intervals
 - Remove grouping at intervals
 - Create custom groups
 - ▶ Remove custom grouping

About filtering data in a PivotTable list

You can use the filter feature to find specific data values or all data that matches a value. You can filter either when designing the PivotTable list or when viewing it in the browser. However, you can restrict access to filtering in the browser.

- Filtering techniques
- Combining multiple filters
- Removing and reapplying a filter
- ▶ Identifying filters that are currently in effect
- ▶ Effects of filtering on calculations
- Search specific data
- Restricting filtering in the browser

Filter a field in a PivotTable list

- ▶ Filter a field in the row, column, filter, or detail area (Autofiltering)
- ▶ Display only data that matches a cell in a PivotTable list (Filter By Selection)
- ▶ Filter a row or column field for top or bottom n values or a percentage (Conditional filtering)

Notes

When items in a field are hidden by an autofilter or a filter by selection, the arrow \blacksquare in the field label is blue. When items are hidden by a conditional filter, the filtered field displays a funnel \square icon to the left of the arrow.

When you apply a filter, the displayed totals are based on visible items only. You can change the setting to include hidden data.

Remove filters to display all data in a PivotTable list

When items in a field are hidden by filtering a field or filtering by selection, the arrow \blacksquare in the field label is blue. When items are hidden by filtering for top or bottom values, the filtered field displays a funnel $\boxed{}$ icon to the left of the arrow.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Do one of the following:
 - Remove all filters
 - ▶ Remove an autofilter or filter by selection from a field
 - Remove a conditional filter from a field

Notes

If you don't want to retain your filters, make sure the **AutoFilter** button is not selected before you start selecting items to filter. If the button is not selected, selecting new items to filter automatically turns filtering on and removes your former filter settings.

You can prevent users from removing filters in the browser by clearing the **Filter** check box on the **Protection** tab of the **Commands and Options** dialog box.

Allow multiple selection in the filter area

You can specify whether the field in the filter area will allow single or multiple selection. In single-selection mode, selecting an item automatically clears the previous selection. In multiple-selection mode, when you select an item, previously selected items remain selected.

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. Select the field in the filter area for which you want to change the setting.
- 3. On the <u>toolbar</u>, click **Commands and Options** , and then click the **Filter and Group** tab.
- 4. Select or clear the **Allow selecting multiple items when in filter area** check box.

Notes

By default, multiple selection is enabled.

This setting applies only when the field is in the filter area. If you move the field to a row, column, or detail area, the field will always support multiple selection.

Refresh a PivotTable list with updated source data

- 1. In the design window, make sure the PivotTable list is activated. For instructions, see Help for your design program.
- 2. On the toolbar, click **Refresh** 1.

Notes

The Office logo cube stops spinning when the refresh operation is complete. While the PivotTable list is being refreshed, you cannot interact with it or make changes to it.

To cancel a refresh operation, press ESC. You can cancel the refresh operation only when the PivotTable list is being calculated— not while source data is being retrieved.

About PivotTable lists that were published from Microsoft Excel

Microsoft Excel PivotTable reports have some capabilities that are not retained when a report is saved or published as a PivotTable list. As a result, you might want to use another design program to make additional changes after publishing your PivotTable list.

The following table summarizes the Excel PivotTable report features that are affected when you publish it as a PivotTable list.

Feature	Result on a Web page
Calculated fields	Formulas are not retained. Changed to total fields that use the default summary function for the field (Sum, Count, Min, or Max).
Calculated items	Not retained.
Summary functions	Only data fields summarized with Sum, Count, Min, or Max are retained. Data fields that use other summary functions are lost.
Custom calculations	Not retained. The data field using the custom calculation is lost.
Character and cell formatting	Not retained. Changes you make to fonts, text size, text color, and cell backgrounds are lost.
Custom subtotals	Not retained. If you change the summary function in Excel, the subtotal or grand total reverts to the summary function of the total field in the PivotTable list on the Web.
Number formats	Partially retained. Number formats that you apply to PivotTable fields in Excel are retained, but number formats that you apply to individual cells are not retained.
	If you use a custom number format or a number format that's not supported by PivotTable lists on the Web, the numbers appear with the same number format as the Excel PivotTable report. If you subsequently change the number format for the field in the PivotTable list, you cannot return the field to the custom number format.

Asterisks that mark totals	Even if you turned off the asterisks marking totals in Excel, the asterisks are displayed in the PivotTable list on the Web.
Print settings	Not retained. The Excel settings to repeat PivotTable row and column labels on each page, repeat items labels after page breaks, and set page breaks between sections are lost.
Grouped items in fields	Partially retained. Grouped items in date fields are retained, but any selected items and numeric items that are grouped in Excel are no longer grouped in the PivotTable list on the Web, and group fields from Excel are not retained.
Custom sort order	Not retained. Instead, the data is in the order in which it is retrieved from the source database.
Indented formats	Not retained. Fields are in the same positions, but the character and cell formatting are not retained. Blank rows between item groups are lost.
Subtotals displayed at the top of item groups	Not retained. Subtotals appear at the bottom of each group.
Top/bottom items AutoShow	Not retained. All items are displayed.
Customized error values and empty cell values	Not retained. Errors and empty cells are displayed as blank cells.
Page fields in rows or columns	Not retained. Page fields become filter fields, which are always displayed across the top.
Password settings	Data in password-protected worksheets and workbooks cannot be saved or published as a Web page. To publish data that's protected, you must use a blank (or no) password. If you save your database password with the query in Excel, users must enter the password when they

	open the Web page in the browser.
Background refresh, retrieving data for each item in a page field individually	Not retained. The PivotTable list on the Web is always refreshed in the foreground, and all data for filter fields is retrieved in one operation.
Changes to Excel source data	Not available. To redefine the range of Excel source data or change the query to select different external data, you must make the change in Excel and republish.
Offline cube file data sources	You cannot reconnect to the original server database from the published PivotTable list, or make changes to the content of the offline cube file from the PivotTable list. If you need to perform either of these operations, you can do so in Excel and then republish to the PivotTable list.

About exporting a PivotTable list to Excel or other applications

If you are familiar with Microsoft Excel PivotTable reports and want to work with the data in Excel, there are several ways to accomplish this. However, if you open a Web page that contains a PivotTable list directly in Excel, you will not be able to view or modify the PivotTable list.

Users have the same exporting and copying capabilities in the browser as you do in the design program.

- ▶ Exporting to an interactive Excel PivotTable report
- Copying data to another program for noninteractive use

Export or copy a PivotTable list to Excel or other applications

- ▶ Export a PivotTable list to Excel
- Copy a PivotTable list to Excel or Word

Troubleshoot PivotTable lists

Some of the content in this topic may not be applicable to some languages.

- ▶ Interacting with the PivotTable list
- Moving fields
- Refreshing data
- Filtering data
- Displaying data